

PERSONAL INFORMATION	DOMENICO UMBRELLO
	 University of Calabria, Via P. Bucci Cubo 45C, 87036, Rende (CS)
	
	
	 https://www.unical.it/storage/teachers/d.umbrello/?lang=en
	h-index: 45 total citations: 7707 (source: www.scopus.com)

Enterprise	University	EPR
☐ Management Level	☒ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
☐ Mid-Management Level	☐ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

01/10/2024 – Present	Full Professor University of Calabria, Arcavacata di Rende (CS), Italy
01/11/2014 – 30/09/2024	Associate Professor University of Calabria, Arcavacata di Rende (CS), Italy
03/01/2005 – 30/10/2014	Assistant Professor University of Calabria, Arcavacata di Rende (CS), Italy
01/01/2012 – 31/07/2012	Visiting Professor University of Kentucky, Lexington (UK), United States
01/03/2011 – 01/09/2011	Visiting Professor University of Kentucky, Lexington (UK), United States
01/05/2008 – 01/08/2008	Visiting Professor University of Kentucky, Lexington (UK), United States
01/02/2003 – 30/09/2003	Visiting Scholar Ohio State University, Columbus (OH), United States

EDUCATION AND TRAINING

2005	Ph.D in Mechanical Engineering University of Calabria, Italy ▪ FE analysis of machining processes: innovative experimental techniques for results assessing
2001	M.Sc. in Mechanical Engineering University of Calabria, Italy ▪ Analysis of machining processes (110/110)

PROJECTS (last five years)

	With leadership roles
2024 - 2026	Network 4 Energy Sustainable Transition (NEST) PE000000021 Spoke 1: BAC Recycling Sustainable Thermo-mechanical demanufacturing Operation for Renewable PhotoVoltaic Panels (Re.S.T.O.Re-PVP) (Local PI)
2023 - 2026	PRIN 2022: 2022W9SHCJ – Adhesive free fibre metal laminates fabrication for aerospace applications (ADVANCE) (Local PI)
2019 - 2023	PRIN 2017: 201742RB8R – Surface functionalization to improve tribo-corrosion performances of metal implants through advanced machining operations (BIONIC) (National PI)
2018 – 2021	ARS01_01061 Processi Integrati e COnnessi per l'Evoluzione Industriale nella PROduzione (PICO&PRO) (co-PI for the UniCal research unit)

	Project reviewer
	ANVUR expert for PhD proposals within the Operative Nation Program 2014-2020 Evaluator of proposals within PRIN 2020 call Member of the board of evaluators of M-era.Net, call 2017 (2017) Member of the board of evaluators of Era.min III, call 2021 (2021) Member of the Board of evaluators of the Fund for Scientific Research - FNRS - public agency for financing scientific research in Belgium (since August 2014) Member of the Board of evaluators of the National Center of Science and Technology Evaluation - public funding agency of the scientific research of Kazakhstan (2017 - actually) Member of the Board of experts for the evaluation of research projects of the Campania Region (since 2014) Member of the Board of experts for the evaluation of research projects of the Puglia Region (since 2019) Member of the Board of evaluator of the Czech Science Foundation (Grantová agentura České republiky - GACR) - public funding agency for scientific research in the Czech Republic (2012)

COMMUNITY SERVICE (last 5y)	
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International and National Scientific Associations	Member of the "Board of Directors" of the European Scientific Association for material FORMing (ESAFORM) (since 2014) Member of the "Board of Directors" of the Italian Manufacturing Society (AITEM) (2015-2017)
Minisymposium Chair	Coordinator of the minisymposium on Machining and Cutting within International ESAFORM Conference (2010 – currently)
International Scientific Committee	Member of the International Scientific Committee International ESAFORM Conference (since 2013) Member of the International Scientific Committee CIRP International Workshop on Modeling of Machining Operations (2007-currently) Member of the International Scientific Committee CIRP International Conference on Surface Integrity (CSI), (2011-currently)
Conference Chair	Chairman of the 28 th ESAFORM Conference in Peastum (SA), May 6-9, 2025
Session chair	Chairman of several technical session in Esaform, CIRP MMO Conferences, etc.
Regular reviewer	Reviewer of more than 25 International Journals covered by ISI and Scopus

EDITORIAL ACTIVITY	
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2012 - 2021	Associate Technical Editor of Machining and Technology: An International Journal, Taylor and Francis
2012 - 2020	Associate Editor of Int. J. of Manufacturing Engineering, Hindawi Pub. Corp. (2012-2020).
2008 - 2009	Guest Editor of International Journal of Machining and Machinability of Materials (Special Issue Vol.6 N°1-2 – 2009) Inderscience Publications.
2012 - Present	Member of the Editorial Board of the Int. J. of Machining and Machinability of Materials, Inderscience Pub. (since May 2008); Int. J. of Manufacturing Engineering, Hindawi Pub. Corp. (2012-2020); American J. of Eng. Science & Technology Research, Academic & Scientific Pub. (since Jan. 2013); Journal of Manufacturing and Materials Processing (since May 2017).

PHD SUPERVISION	
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2023 – Present	Stefania Ferrisi, PhD student of the XXXIX doctorate programme in Civil and Industrial Engineering (DICI)
2019 - 2023	Maria Rosaria Saffioti, (PhD, 2024, currently Researcher Fellow, University of Calabria, Italia)
2017 - 2021	Sergio Rinaldi (PhD, 2021, currently Senior Researcher, Maserati SpA, Italia)
2014 - 2018	Stano Imbrogno (PhD, 2018, currently Senior Researcher, Siemens, UK)
2008- 2012	Serafino Caruso (PhD, 2012, currently Research Fellow, University of Calabria, Italia)
2005- 2009	S. Rizzuti (PhD, 2009; Co-advised with Prof. L. Filice, currently Product and R&D Manager, Sandvik Coromant, Italia)

TEACHING	
2011 - Present	Manufacturing and Materials Technology (Bachelor's degree in Mechanical Engineering, 3rd year, 1 st semester, 9 cfu);
2011 - Present	Industrial Production Systems (Master's degree in Mechanical Engineering, 1st year, 2 ^o semester, 9 cfu).
2004 - 2010	Several teaching for Mechanical and Management Engineering for Bachelor and Master Students
INSTITUTIONAL RESPONSIBILITIES	
November 2025 – Present	Member of "PRO3" Committee. PRO3 supports University governance by managing strategic triennial planning and ministry-level projects. It designs institutional evaluation frameworks, defines performance measurement criteria for departments and courses, and ensures that all performance cycles are fully aligned with quality assurance standards.
November 2024 – Present	Deputy Chair of Graduate program in Mechanical Engineering for Master's degree
April 2024 - Present	Scientific Responsible of the PoliTech of the Department of Mechanical, Energy and Management Engineering of the University of Calabria
April 2013 - 2023	Scientific Responsible of the Machine Tool Laboratory of the Department of Mechanical, Energy and Management Engineering of the University of Calabria
November 2019 - October 2021	Member of the Steering Committee of the Department of Mechanical, Energy and Management Engineering
November 2016 - October 2021	Delegate for the Laboratories of the Department of Mechanical, Energy and Management Engineering
November 2021 - Present	Delegate for the scientific products evaluation of the Department of Mechanical, Energy and Management Engineering (since 2021)
2013 - 2015	Member of the Joint Commission of the Department of Mechanical, Energy and Management Engineering (2013 - 2015)
November 2008 -November 2010	Member of the Faculty Research Committee
November 2015 - October 2018	Deputy Chair of Graduate program in Mechanical Engineering for Master's degree (November 2015 - October 2018)
January 2008 - December 2010	Secretary of the PhD in Mechanical Engineering (UNICAL) from 1st January 2008 to 31st December 2010.
INVITED TALKS	
27–29 April 2011	"Contribution in the field of Metal Cutting" at 14th ESAFORM Conference, Belfast, (United Kingdom) Plenary Lecture
2005 - 2009	7 Keynotes at ESAFORM Conferences
FELLOWSHIPS AND AWARDS	
2011	F.W. Taylor Medal of CIRP (The International Academy for Production Engineering).
2011	2011 ESAFORM Scientific Prize (European Scientific Association for material FORMing)
2007	2005 AITEM Outstanding Young Manufacturing Research Award by the Italian Manufacturing Society
2012 - Present	CIRP – The International Academy for Production Engineering (nominated Fellow Member in August 2023)
2003 - Present	ESAFORM – European Scientific Association for material FORMing
2001 - Present	AITeM – Italian Manufacturing Society
PUBLICATIONS	
Publications Journal papers in the last 10 years	H. Zhang, Y. Zhang Y., C. Ye, G. Rotella, D. Umbrello (2025) "The effects of laser assisted ultrasonic nanocrystal surface modification on 3D-printed Ti6Al4V alloy", CIRP Journal of Manufacturing Science and Technology, Vol. 61, pp. 463-473. S. Caruso, M. R. Saffioti, V. Siciliani, G. Zaniboni, D. Umbrello, L. Orazi, L. Filice (2025) "Influence of Cutting Parameters and Tool Surface Texturing on Surface Integrity in Face Milling of AISI 1050

- Carbon Steel", *Journal of Manufacturing and Materials Processing*, Vol. 9/12, 415.
3. S. Caruso, S. Imbrogno, D. Umbrello (2025) "A physically based constitutive model for predicting surface and subsurface changes induced by orthogonal dry machining of hardened AISI 52100 steel", *International Journal of Advanced Manufacturing Technology*, Vol. 137/3, pp. 1389–1403.
4. M.R. Saffioti, F. Cosco, G. Rotella, D. Umbrello (2024) "A new methodology for improving and testing the performance of hip prosthesis through advanced severe plastic deformation processes", *International Journal of Advanced Manufacturing Technology*, Vol. 135/5-6, pp. 2259–2271.
5. S. Caruso, M. Sanguedolce, G. Serratore, C. De Bartolo, L. Filice, D. Umbrello (2024) "Lagrangian Finite Element Model Formulation and Experimental Validation of the Laser Impact Weld Process for Ti/Brass Joining", *Journal of Manufacturing and Materials Processing*, Vol. 51/4, 141.
6. H. Attia, A. Sadek A., Y. Altintas, A. Matsubara, D. Umbrello, K. Wegener, R. Eisseler, F. Ducobu, H. Ghadbeigi (2024) "Physics based models for characterization of machining performance – A critical review", *CIRP Journal of Manufacturing Science and Technology*, Vol. 51, pp. 161–189.
7. A. Sicilia, M.R. Saffioti, E. Miorin, V. Zin, A. Ruggiero, D. Umbrello (2024) "Tribocorrosion experimental investigation on Ti6Al4V burnished samples used for hip joint replacement", *Tribology - Materials, Surfaces and Interfaces*, Vol. 18/2, pp. 133–142.
8. G. Rotella, C. Morano, M.R. Saffioti, D. Umbrello (2024) "Surface functionalization of titanium screws for orthopaedic implant applications", *CIRP Annals - Manufacturing Technology*, Vol. 73/1, pp. 453–456.
9. G. Rotella, F. Cosco, M.R. Saffioti, D. Umbrello (2023) "Evaluation of fretting corrosion fatigue in burnishing of Ti6Al4V component for artificial hip joint", *CIRP Annals - Manufacturing Technology*, Vol. 72/1, pp. 509–512.
10. F. Rubino, F. Tucci, S. Caruso, D. Umbrello, P. Carlone (2023) "An integrated numerical approach to simulate the filler deposition and the shape distortions in gas metal arc welding", *CIRP Journal of Manufacturing Science and Technology*, Vol. 45, pp. 26–34.
11. G. Rotella, M.R. Saffioti, M. Sanguedolce, D. Umbrello (2022) "Finite element modelling of combined turning/burnishing effects on surface integrity of Ti6Al4V alloy", *International Journal of Advanced Manufacturing Technology*, Vol. 119/1-2, pp. 177–187.
12. S. Yang, D. Umbrello, O.W. Dillon, I.S. Jawahir, (2022) "Numerical Investigation of Dynamic Recrystallization Induced Microstructural Evolution in Cryogenic Burnishing of Co-Cr-Mo Biomaterial", *Journal of Materials Engineering and Performance*, Vol. 31/8, pp. 6904–6921.
13. D. Umbrello M.R. Saffioti, M.S. Imbrogno (2022) "Surface modifications induced by turning on additively manufactured Zr-702 and their effects on cell adhesion and proliferation for biomedical applications", *CIRP Annals - Manufacturing Technology*, Vol. 71/1, pp. 457–460.
14. D. Umbrello, T. Matsumura, P.J. Arrazola, G. Germain, G., C. Courbon (2022) "Mini symposium on cutting and machining: 25 years of ESAFORM activity", *International Journal of Material Forming*, Vol. 15/3, 35.
15. S. Caruso, D. Umbrello (2022) "Numerical and experimental validation of gas metal arc welding on AISI 441 ferritic stainless steel through mechanical and microstructural analysis", *International Journal of Advanced Manufacturing Technology*, Vol. 120/11-12, pp. 7433–7444.
16. F. Careri, D. Umbrello, K. Essa, M.M. Attallah, S. Imbrogno (2021) "The effect of the heat treatments on the tool wear of hybrid Additive Manufacturing of IN718", *Wear*, Vol. 470-471, 203617.
17. S. Rinaldi, D. Umbrello, S.N. Melkote (2021) "Modelling the effects of twinning and dislocation induced strengthening in orthogonal micro and macro cutting of commercially pure titanium", *International Journal of Mechanical Sciences*, Vol. 190, 106045.
18. F. Careri, S. Imbrogno, D. Umbrello, M.M. Attallah, J.C. Outeiro, A.C. Batista (2021) "Machining and heat treatment as post-processing strategies for Ni-superalloys structures fabricated using direct energy deposition", *Journal of Manufacturing Processes*, Vol. 61, pp. 236–244.
19. S. Imbrogno, D. Umbrello, V. Schulze, F. Zanger, E. Segebadé (2020) "Metallurgical and material properties correlations between machined and severely plastic deformed aluminium alloy", *International Journal of Material Forming*, Vol. 13/5, pp. 699 – 708.
20. G.C. Nie, K. Zhang, J.C. Outeiro, S. Caruso, D. Umbrello, H. Ding, X.M. Zhang (2020) "Plastic strain threshold determination for white layer formation in hard turning of AISI 52100 steel using micro-grid technique and finite element simulations", *Journal of Manufacturing Science and Engineering, Transactions of the ASME* 142(3), 034501-1.
21. G. Rotella, A. Del Prete, M. Muzzupappa, D. Umbrello (2020) "Innovative manufacturing process of functionalized PA2200 for reduced adhesion properties", *Journal of Manufacturing and Materials Processing*, Vol. 4/2, jmpp4020036.
22. S. Caruso, G. Rotella, A. Del Prete, D. Umbrello (2020) "Finite element modeling of microstructural changes in hard machining of SAE 8620", *Applied Science*, Vol. 10/1, 121.
23. F. Jafarian, S. Masoudi, D. Umbrello, L. Filice (2019) "New strategies for improvement of numerical model accuracy in machining of nickel-based alloy", *Simulation Modelling Practice and Theory*, Vol. 94, pp. 134-138.
24. D. Umbrello, G. Rotella (2018) "Fatigue life of machined Ti6Al4V alloy under different cooling conditions", *CIRP Annals - Manufacturing Technology*, Vol. 67/1, pp. 99–102.
25. G. Rotella, S. Imbrogno, S. Candamano, D. Umbrello (2018) "Surface Integrity of machined additively manufactured Ti alloys", *Journal of Materials Processing Technology*, Vol. 259, pp. 180–185.
26. S. Imbrogno, S. Rinaldi, D. Umbrello, L. Filice, R. Franchi, A. Del Prete (2018) "A physically based constitutive model for predicting the surface integrity in machining of Waspaloy", *Materials and Design*, Vol. 152, pp. 140–155.
27. F. Jafarian, H. Soleimani, S. Masoudi, B. Jabbaripour, D. Umbrello (2018), "Experimental and numerical investigation of thermal loads in Inconel 718 machining" *Materials and Manufacturing Processes*, Vol. 33/9, pp. 1020-1029.

	28. S. Rinaldi, S. Caruso, D. Umbrello, L. Filice, R. Franchi, A. Del Prete (2018) "Machinability of Waspaloy under different cutting and lubri-cooling conditions", International Journal of Advanced Manufacturing Technology, Vol. 94, pp. 3703–3712. 29. A. Fortunato, A. Lulaj, S. Melkote, E. Liverani, A. Ascari, D. Umbrello (2018) "Milling of maraging steel components produced by selective laser melting", International Journal of Advanced Manufacturing Technology, Vol. 94/5-8, pp. 1895-1902. 30. R. Franchi, A. Del Prete, D. Umbrello (2017) "Inverse Analysis Procedure to Determine Flow Stress and Friction Data for Finite Element Modeling of Machining", Journal of Material Forming, Vol. 10/5, pp. 685-695. 31. D. Umbrello, A. Bordin, S. Imbrogno, S. Bruschi (2017) "3D Finite Element Modeling of Surface Modification in Dry and Cryogenic Machining of EBM Ti6Al4V Alloy", CIRP Journal of Manufacturing Science and Technology, Vol. 18, pp. 92-100. 32. S. Caruso, S. Imbrogno, S. Rinaldi, D. Umbrello (2017), "Finite Element Modeling of Microstructural Changes in Dry Machining Waspaloy", International Journal of Advanced Manufacturing Technology, Vol. 89/1-4, pp. 227-240. 33. F. Jafarian, D. Umbrello, S. Golpayegani Z. Darake (2016) "Experimental Investigation to Optimize Tool Life and Surface Roughness in Inconel 718 Machining", Materials and Manufacturing Processes, Vol. 31/13, pp. 1683–1691. 34. D. Umbrello, S. Caruso, S. Imbrogno (2016) "Finite Element Modeling of Microstructural Changes in Dry and Cryogenic Machining AISI 52100 Steel", Materials Science and Technology, Vol. 32/11, pp. 1062–1070. 35. I.S. Jawahir, H. Attia, D. Biermann, J. Dufloy, F. Klocke, D. Meyer, S.T. Newman, F. Pusavec, M. Putz, J. Rech, V. Schulze, D. Umbrello (2016), "Cryogenic manufacturing processes", CIRP Annals - Manufacturing Technology, Vol. 65/2, pp. 713–736. 36. S. Bruschi, Z. Rysava, G. Tristo, D. Umbrello, P.F. Bariani, L. De Chiffre (2016), "Surface integrity of micro-milled EBM Ti6Al4V under clean lubricating conditions", Journal of Cleaner Production, Vol. 133, pp. 932-941. 37. F. Jafarian, D. Umbrello, B. Jabbaripour, (2016) "Identification of new material model for machining simulation of Inconel 718 alloy and the effect of tool edge geometry on microstructure changes", Simulation Modelling Practice and Theory, Vol. 66, pp. 273-284.
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According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.

May 16th, 2026

Prof. Domenico Umbrello